

IN THE CLAIMS

1. (Canceled)
2. (Previously Presented) The method according to claim 4, wherein said network is an Internet Protocol (IP) network.
3. (Previously Presented) The method according to claim 4, wherein said network is an Asynchronous Transfer Mode (ATM) network.
4. (Currently Amended) A method comprising:

transmitting data to a first router from a first gateway module along a first virtual circuit of a plurality of virtual circuits in a network and a plurality of detecting cells to the first router from the first gateway module along said first virtual circuit and to a second router from the first gateway module along a second virtual circuit of said plurality of virtual circuits;

detecting a failure on said first virtual circuit using a switch; and

switching transmission of said data from said first virtual circuit to a second virtual circuit of said plurality of virtual circuits in said network.
5. (Original) The method according to claim 4, wherein said plurality of detecting cells are transmitted at a predetermined frequency.

6. (Original) The method according to claim 4, wherein each detecting cell of said plurality of detecting cells is an operation and management (OAM) loopback cell having a correlation tag with incrementing sequence number.

7. (Original) The method according to claim 4, wherein said detecting further comprises:

receiving said plurality of detecting cells; and
detecting a predetermined gap in said plurality of detecting cells on said first virtual circuit.

8. (Original) The method according to claim 7, wherein said predetermined gap includes three detecting cells of said plurality of detecting cells.

9. (Previously Presented) The method according to claim 4, further comprising transmitting the plurality of detecting cells along each virtual circuit of said plurality of virtual circuits.

10. (Original) The method according to claim 7, further comprising:
detecting a predetermined sequence of detecting cells of said plurality of detecting cells on said first virtual circuit; and
switching transmission of said data from said second virtual circuit to said first virtual circuit.

11. (Original) The method according to claim 7, further comprises:
detecting a predetermined sequence of detecting cells of said plurality of detecting cells on said first virtual circuit; and
maintaining transmission of said data along said second virtual circuit.
12. (Original) The method according to claim 10, wherein said predetermined sequence includes five detecting cells of said plurality of detecting cells.
13. (Previously Presented) The method according to claim 3, wherein said data comprises Asynchronous Transfer Mode (ATM) cells.
14. (Canceled)
15. (Currently Amended) A switch comprising:
a gateway module ~~for transmitting~~to transmit data to a first router along a first virtual circuit of a plurality of virtual circuits in a network;
said gateway module further including a line card ~~for detecting~~to detect a failure on said first virtual circuit and switching transmission of said data to the first router ~~along from~~ said first virtual circuit to a second router along a second virtual circuit of said plurality of virtual circuits, wherein said gateway module further transmits a plurality of detecting cells along said first virtual circuit to the first router from the gateway module and said second virtual circuit to the second router from the gateway module.

16. (Original) The switch according to claim 15, wherein said plurality of detecting cells are transmitted at a predetermined frequency.

17. (Original) The switch according to claim 15, wherein each detecting cell of said plurality of detecting cells is an operation and management (OAM) loopback cell having a correlation tag with incrementing sequence number.

18. (Original) The switch according to claim 15, wherein said line card further receives said plurality of detecting cells and detects a predetermined gap in said plurality of detecting cells on said first virtual circuit.

19. (Original) The switch according to claim 18, wherein said predetermined gap includes three detecting cells of said plurality of detecting cells.

20. (Original) The switch according to claim 15, wherein said line card further receives said plurality of detecting cells and detects a predetermined sequence of detecting cells of said plurality of detecting cells on said first virtual circuit.

21. (Original) The switch according to claim 20, wherein said line card further switches transmission of said data from said second virtual circuit to said first virtual circuit.

22. (Original) The switch according to claim 20, wherein said line card further maintains transmission of said data along said second virtual circuit.
23. (Original) The switch according to claim 20, wherein said predetermined sequence includes five detecting cells of said plurality of detecting cells.
24. (Previously Presented) The switch according to claim 15, wherein said data comprises Asynchronous Transfer Mode (ATM) cells.
25. (Canceled)
26. (Previously Presented) The computer readable medium according to claim 28, wherein said network is an Internet Protocol (IP) network.
27. (Previously Presented) The computer readable medium according to claim 28, wherein said network is an Asynchronous Transfer Mode (ATM) network.
28. (Currently Amended) A computer readable medium containing executable instructions which, when executed in a processing system, cause the system to perform a method comprising:
- transmitting data to a first router from a gateway module along a first virtual circuit of a plurality of virtual circuits in a network and a plurality of detecting cells to the

first router from the gateway module along said first virtual circuit and to a second router from the gateway module along a second virtual circuit of said plurality of virtual circuits;

detecting a failure on said first virtual circuit by a switch comprising the computer readable medium; and

switching transmission of said data from said first virtual circuit to a second virtual circuit of said plurality of virtual circuits in said network.

29. (Original) The computer readable medium according to claim 28, wherein said plurality of detecting cells are transmitted at a predetermined frequency.

30. (Original) The computer readable medium according to claim 28, wherein each detecting cell of said plurality of detecting cells is an operation and management (DAM) loopback cell having a correlation tag with incrementing sequence number.

31. (Original) The computer readable medium according to claim 28, wherein said detecting further comprises:

receiving said plurality of detecting cells; and

detecting a predetermined gap in said plurality of detecting cells on said first virtual circuit.

32. (Original) The computer readable medium according to claim 31, wherein said predetermined gap includes three detecting cells of said plurality of detecting cells.

33. (Previously Presented) The computer readable medium according to claim 28, wherein said method further comprises transmitting the plurality of detecting cells along each virtual circuit of said plurality of virtual circuits.

34. (Original) The computer readable medium according to claim 31, wherein said method further comprises:

detecting a predetermined sequence of detecting cells of said plurality of detecting cells on said first virtual circuit; and

switching transmission of said data from said second virtual circuit to said first virtual circuit.

35. (Original) The computer readable medium according to claim 31, wherein said method further comprises:

detecting a predetermined sequence of detecting cells of said plurality of detecting cells on said first virtual circuit; and

maintaining transmission of said data along said second virtual circuit.

36. (Original) The computer readable medium according to claim 34, wherein said predetermined sequence includes five detecting cells of said plurality of detecting cells.

37. (Previously Presented) The computer readable medium according to claim 27, wherein said data comprises Asynchronous Transfer Mode (ATM) cells.

38. (Canceled)

39. (Previously Presented) The apparatus according to claim 41, wherein said network is an Internet Protocol (IP) network.

40. (Previously Presented) The apparatus according to claim 41, wherein said network is an Asynchronous Transfer Mode (ATM) network.

41. (Currently Amended) An apparatus comprising:

means for transmitting data to a first router from a gateway module along a first virtual circuit of a plurality of virtual circuits in a network and a plurality of detecting cells to the first router from the gateway module along said first virtual circuit and to a second router from the gateway module along a second virtual circuit of said plurality of virtual circuits;

means for detecting a failure on said first virtual circuit using a switch; and

means for switching transmission of said data from said first virtual circuit to a second virtual circuit of said plurality of virtual circuits in said network.

42. (Original) The apparatus according to claim 41, wherein said plurality of detecting cells are transmitted at a predetermined frequency.

43. (Original) The apparatus according to claim 41, wherein each detecting cell of said plurality of detecting cells is an operation and management (OAM) loopback cell having a correlation tag with incrementing sequence number.
44. (Original) The apparatus according to claim 41, further comprising:
means for receiving said plurality of detecting cells; and
means for detecting a predetermined gap in said plurality of detecting cells on said first virtual circuit.
45. (Original) The apparatus according to claim 44, wherein said predetermined gap includes three detecting cells of said plurality of detecting cells.
46. (Previously Presented) The apparatus according to claim 41, further comprising means for transmitting the plurality of detecting cells along each virtual circuit of said plurality of virtual circuits.
47. (Original) The apparatus according to claim 44, further comprising:
means for detecting a predetermined sequence of detecting cells of said plurality of detecting cells on said first virtual circuit; and
means for switching transmission of said data from said second virtual circuit to said first virtual circuit.
48. (Original) The apparatus according to claim 44, further comprises:

means for detecting a predetermined sequence of detecting cells of said plurality of detecting cells on said first virtual circuit; and

means for maintaining transmission of said data along said second virtual circuit.

49. (Original) The apparatus according to claim 47, wherein said predetermined sequence includes five detecting cells of said plurality of detecting cells.

50. (Previously Presented) The apparatus according to claim 40, wherein said data comprises Asynchronous Transfer Mode (ATM) cells.

51. (New) The method of claim 4, wherein switching transmissions of said data further comprises:

transmitting the data to the second router along a communication link upon detecting the failure on said first virtual circuit using the switch; and

transmitting the data to the first gateway module from the second router along the second virtual circuit.

52. (New) The method of claim 4, further comprising:

receiving data from a second gateway module by the first router along a third virtual circuit of the plurality of virtual circuits in the network;

receiving the plurality of detecting cells from the second gateway module by the first router along the third virtual circuit; and

transmitting the plurality of detecting cells to the first gateway module from the first router along the first virtual circuit.

53. (New) The method of claim 52, further comprising transmitting the data to the first gateway module from the first router along the first virtual circuit when the switch does not detect the failure on the first virtual circuit.

54. (New) The method of claim 52, wherein switching transmissions of said data further comprises:

transmitting the data to the second router along a communication link upon detecting the failure on said first virtual circuit using the switch; and

transmitting the data to the first gateway module from the second router along the second virtual circuit.